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I. STATUS OF CLAIMS

Claims 1-48 are pending.

Claims 1-22, 27-41, 43, and 46-48 stand rejected under 35 U.S.C. §102(b) as being anticipated by Wallace, et al. (U.S. Patent No. 3,860,796) ("Wallace"). *See Examiner's Office Action*, p. 2 (6 February 2008).

Claims 24-26, 42, and 44 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Wallace in view of Waldron, et al. (U.S. Patent No. 5,296,691) ("Waldron") *See Examiner's Office Action*, p. 4 (6 February 2008).

II. ISSUES TO BE REVIEWED

The issues in this response relate to whether the art of record establishes a *prima facie* case of the unpatentability of Applicant's Claims 1-48. For reasons set forth elsewhere herein, Applicant respectfully asserts that the art of record does not establish a *prima facie* case of the unpatentability of any pending claim. Accordingly, Applicant respectfully requests that Examiner hold all pending Claims 1-48 allowable for at least the reasons described herein, and issue a Notice of Allowance on same.

III. ARGUMENT: ART OF RECORD DOES NOT ESTABLISH *PRIMA FACIE* CASE OF UNPATENTABILITY IN VIEW OF CITED ART OF RECORD

Examiner has stated "Claims 1-22, 27-41, 43, and 46-48 are rejected under 35 U.S.C. 102(b) as being anticipated by Wallace et al. (US 3,860,796)." *See Examiner's Office Action*, p. 2 (6 February 2008). Examiner has also stated "Claims 24-26, 42, and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wallace in view of Waldron et al. (US 5,296,691)." *See Examiner's Office Action*, p. 4 (6 February 2008).

In response, Applicant respectfully asserts herein that, under the MPEP and legal standards for patentability as set forth below, the art of record does not establish a *prima facie* case of the unpatentability of Applicant's claims at issue. Specifically, Applicant respectfully shows below that the art of record does not recite the text of Applicant's claims at issue, and

hence fails to establish a *prima facie* case of unpatentability. Accordingly, Applicant respectfully requests that the Examiner withdraw his rejections and hold all claims to be allowable over the art of record.

A. MPEP Standards for Patentability¹

The MPEP states as follows: "the examiner bears the initial burden, on review of the prior art or on any other ground, of presenting a *prima facie* case of unpatentability. If that burden is met, the burden of coming forward with evidence or argument shifts to the applicant. . . . If examination at the initial stage does not produce a *prima facie* case of unpatentability, then without more the applicant is entitled to grant of the patent." MPEP § 2107 (citing *In re Oetiker*, 977 F.2d 1443, 1445, 24 U.S.P.Q.2d 1443, 1444 (Fed. Cir. 1992)); *In Re Glaug* 283 F.3d 1335, 62 USPQ2d 1151 (Fed. Cir. 2002) ("During patent examination the PTO bears the initial burden of presenting a *prima facie* case of unpatentability. *In re Oetiker*, 977 F.2d 1443, 1445, 24 U.S.P.Q.2d 1443, 1444 (Fed. Cir. 1992); *In re Piasecki*, 745 F.2d 1468, 1472, 223 U.S.P.Q. 785, 788 (Fed. Cir. 1984). If the PTO fails to meet this burden, then the applicant is entitled to the patent."). Accordingly, unless and until an examiner presents evidence establishing *prima facie* unpatentability, an applicant is entitled to a patent on all claims presented for examination.

1. MPEP Standards for Determining Anticipation

An examiner bears the initial burden of factually supporting any *prima facie* conclusion of anticipation. *Ex Parte Skinner*, 2 U.S.P.Q.2d 1788, 1788-89 (B.P.A.I. 1986); *In Re King*, 801 F.2d 1324, 231 U.S.P.Q. (BNA) 136 (Fed. Cir. 1986); MPEP § 2107 (citing *In re Oetiker*, 977 F.2d 1443, 1445, 24 U.S.P.Q.2d 1443, 1444 (Fed. Cir. 1992) ("[T]he examiner bears the initial burden, on review of the prior art or on any other ground, of presenting a *prima facie* case of unpatentability....")). Failure of an examiner to meet this burden entitles an applicant to a patent. *Id.* ("[i]f examination at the initial stage does not produce a *prima facie* case of unpatentability, then without more the applicant is entitled to grant of the patent").

¹ Applicant is aware that Examiner is familiar with the MPEP standards. Applicant is merely setting forth the MPEP standards to serve as a framework for Applicant's arguments following and to ensure a complete written record is established. Should Examiner disagree with Applicant's characterization of the MPEP standards, Applicant respectfully requests correction.

The MPEP indicates that in order for an examiner to establish a *prima facie* case of anticipation of an applicant's claim, the examiner must first interpret the claim,² and thereafter show that the cited prior art discloses the same elements, in the same arrangement, as the elements of the claim which the examiner asserts is anticipated. More specifically, the MPEP states that "[a] claim is anticipated *only if each and every element as set forth in the claim is found*, either expressly or inherently described, in a single prior art reference. . . . The identical invention must be shown in as complete detail as is contained in the . . . claim. . . . The elements must be arranged as required by the claim" *MPEP* § 2131 (emphasis added). Consequently, under the guidelines of the MPEP set forth above, if there is *any* substantial difference between the prior art cited by an examiner and an applicant's claim which the examiner asserts is rendered anticipated by the prior art, the prior art does NOT establish a *prima facie* case of anticipation and, barring other rejections, the applicant is entitled to a patent on such claim.

2. MPEP Standards for Determining Obviousness

"[T]he examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness."³ *MPEP* § 2142. The MPEP indicates that in order for an examiner to establish a *prima facie* case that an invention, as defined by a claim at issue, is obvious, the examiner must (1) interpret the claim at issue; (2) define one or more prior art reference components relevant to the claim at issue; (3) ascertain the differences between the one or more prior art reference components and the elements of the claim at issue; and (4) adduce objective evidence which establishes, under a preponderance of the evidence standard, a teaching to modify the teachings of the prior art reference components such that the prior art reference components can be used to construct a device substantially equivalent to the claim at issue. This last step generally encompasses two sub-steps: (1) adducement of objective evidence teaching

² With respect to interpreting a claim at issue, the MPEP directs that, during examination -- as opposed to subsequent to issue -- such claim be interpreted as broadly as the claim terms would reasonably allow, in light of the specification, when read by one skilled in the art with which the claimed invention is most closely connected. *MPEP* § 2111.

³ An invention, as embodied in the claims, is rendered obvious if an examiner concludes that although the claimed invention is not identically disclosed or described in a reference, the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *MPEP* § 2141 (citing 35 U.S.C. § 103).

how to modify the prior art components to achieve the individual elements of the claim at issue; and (2) adducement of objective evidence teaching how to combine the modified individual components such that the claim at issue, as a whole, is achieved. *MPEP* § 2141; *MPEP* § 2143. Each of these forgoing elements is further defined within the *MPEP*. *Id.*

This requirement has been explained recently by the Supreme Court in *KSR v. Teleflex*, 550 U.S. ____; 127 S. Ct. 1727 (2007) which noted that such a rejection requires "some articulated reasoning ... to support the legal conclusion of obviousness." As stated by the Court, obviousness can be established where "there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue. To facilitate review, **this analysis should be made explicit.**" (*emphasis added*) See *In re Kahn*, 441 F. 3d 977, 988 (CA Fed. 2006) ('[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.'). *KSR v. Teleflex*, 550 U.S. ____; 127 S. Ct. 1727 at 1741.

As further described by the Court "**[A] patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art.**" Although common sense directs one to look with care at a patent application that claims as innovation the combination of two known devices according to their established functions, it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does. This is so because inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known." *KSR v. Teleflex*, 550 U.S. ____; 127 S. Ct. 1727 at 1741.

a) Interpreting a Claim at Issue

With respect to interpreting a claim at issue, the *MPEP* directs that, during examination -- as opposed to subsequent to issue -- such claim be interpreted as broadly as the claim terms would reasonably allow when read by one skilled in the art with which the claimed invention is most closely connected. In practice, this is achieved by giving each of the terms in the claim the "plain meaning" of the terms as such would be understood by those having ordinary skill in the

art, and if portions of the claim have no "plain meaning" within the art, or are ambiguous as used in a claim, then the examiner is to consult the specification for clarification. *MPEP* § 2111.

b) Definition of One or More Prior Art Reference Components Relevant to the Claim at Issue

Once the claim at issue has been properly interpreted, the next step is the definition of one or more prior art reference components (*e.g.*, electrical, mechanical, or other components set forth in a prior art reference) relevant to the properly interpreted claim at issue. With respect to the definition of one or more prior art reference components relevant to the claim at issue, the *MPEP* defines three proper sources of such prior art reference components, with the further requirement that each such source must have been extant at the time of invention to be considered relevant. These three sources are as follows: patents as defined by 35 U.S.C. § 102, printed publications as defined by 35 U.S.C. § 102, and information (*e.g.*, scientific principles) deemed to be "well known in the art"⁴ as defined under 35 U.S.C. § 102. *MPEP* § 2141; *MPEP* § 2144.

c) Ascertainment of Differences between Prior Art Reference Components and Claim at Issue; Teaching to Modify and/or Combine Prior Art Reference Components to Remedy Those Differences in Order to Achieve Recitations of Claim at Issue

With one or more prior art components so defined and drawn from the proper prior art sources, the differences between the one or more prior art reference components and the elements of the claim at issue are to be ascertained. Thereafter, in order to establish a case of *prima facie* obviousness, an examiner must set forth a rationale, supported by objective evidence⁵ sufficient to

⁴ The fact that information deemed to be "well known in the art" can serve as a proper source of prior art reference components seems to open the door to subjectivity, but such is not the case. As a remedy to this potential problem, *MPEP* § 2144.03 states that if an examiner asserts that his position is derived from and/or is supported by a teaching or suggestion that is alleged to have been "well known in the art," and that if an applicant traverses such an assertion (that something was "well known within the art"), the examiner must cite a reference in support of his or her position. The same *MPEP* section also states that when a rejection is based on facts within the personal knowledge of an examiner, the data should be stated as specifically as possible, and the facts must be supported, when called for by the applicant, by an affidavit from the examiner. Such an affidavit is subject to contradiction or explanation by the affidavits of the applicant and other persons. *Id.* Thus, all sources of prior art reference components must be objectively verifiable.

⁵ The proper sources of the objective evidence supporting the rationale are the defined proper sources of prior art reference components, discussed above, with the addition of factually similar legal precedent. *MPEP* § 2144.

demonstrate under a preponderance of the evidence standard, that in the prior art extant at the time of invention there was a teaching to modify and/or combine the one or more prior art reference components to construct a device practicably equivalent to the claim at issue.

The preferable evidence relied upon is an express teaching to modify/combine within the properly defined objectively verifiable sources of prior art. In the absence of such express teaching, an examiner may attempt to establish a rationale to support a finding of such teaching reasoned from, or based upon, express teachings taken from the defined proper sources of such evidence (*i.e.*, properly defined objectively verifiable sources of prior art). *MPEP* § 2144; *In re Dembiczak*, 50 U.S.P.Q.2d 1614 (Fed. Cir. 1999).

The MPEP recognizes the pitfalls associated with the tendency to subconsciously use impermissible "hindsight" when an examiner attempts to establish such a rationale. The MPEP has set forth at least two rules to ensure against the likelihood of such impermissible use of hindsight. The first rule is that:

under 35 U.S.C. 103, the examiner must step backward in time and into the shoes worn by the hypothetical "person of ordinary skill in the art" when the invention was unknown and just before it was made. In view of all factual information,⁶ the examiner must then make a determination whether the claimed invention "as a whole" would have been obvious at that time to that person. Knowledge of an Applicant's disclosure must be put aside in reaching this determination, yet kept in mind in order to determine the "differences," conduct the search, and evaluate the "subject matter as a whole" of the invention. The tendency to resort to "hindsight" based upon an Applicant's disclosure is often difficult to avoid due to the very nature of the examination process. However, impermissible hindsight must be avoided and the legal conclusion must be reached on the basis of the facts gleaned from the prior art.

MPEP § 2142 (emphasis added). Thus, if the only objective evidence of such teaching to modify and/or combine prior art reference components is an applicant's disclosure, no evidence of such teaching exists.⁷

⁶ "Factual information" is information actually existing or occurring, as distinguished from mere supposition or opinion. *Black's Law Dictionary* 532 (5th ed. 1979).

⁷ An applicant may argue that an examiner's conclusion of obviousness is based on improper hindsight reasoning. However, "[a]ny judgment on obviousness is in a sense necessarily a reconstruction based on hindsight reasoning, but so long as it takes into account only knowledge which was within the level of ordinary skill in the art at the time the claimed invention was made and does not include knowledge gleaned only from applicant's disclosure, such a reconstruction is proper." *MPEP* § 2145(X)(A) (emphasis added).

The second rule is that if an examiner attempts to rely on some advantage or expected beneficial result that would have been produced by a modification and/or combination of the prior art reference components as evidence to support a rationale to establish such teachings to modify and/or combine prior art reference components, the MPEP requires that such advantage or expected beneficial result be objectively verifiable teachings present in the acceptable sources of prior art (or drawn from a convincing line of reasoning based on objectively verifiable established scientific principles or teachings). *MPEP* § 2144. Thus, as a guide to avoid the use of impermissible hindsight, these rules from the MPEP make clear that absent some objective evidence, sufficient to persuade under a preponderance of the evidence standard, no teaching of such modification and/or combination exists.⁸

⁸ *In Re Sang Su Lee* 277 F.3d 1338 (Fed. Cir. 2002) (“When patentability turns on the question of obviousness, the search for and analysis of the prior art includes evidence relevant to the finding of whether there is a teaching, motivation, or suggestion to select and combine the references relied on as evidence of obviousness.”) *See, e.g., McGinley v. Franklin Sports, Inc.*, 262 F.3d 1339, 1351-52, 60 U.S.P.Q.2d 1001, 1008 (Fed. Cir. 2001) (“the central question is whether there is reason to combine [the] references,” a question of fact drawing on the *Graham* factors). “The factual inquiry whether to combine references must be thorough and searching.” *Id.* It must be based on objective evidence of record. This precedent has been reinforced in myriad decisions, and cannot be dispensed with. *See, e.g., Brown & Williamson Tobacco Corp. v. Philip Morris Inc.*, 229 F.3d 1120, 1124-25, 56 U.S.P.Q.2d 1456, 1459 (Fed. Cir. 2000) (“a showing of a suggestion, teaching, or motivation to combine the prior art references is an ‘essential component of an obviousness holding’”) (quoting *C.R. Bard, Inc., v. M3 Systems, Inc.*, 157 F.3d 1340, 1352, 48 U.S.P.Q.2d 1225, 1232 (Fed. Cir. 1998)); *In re Dembiczak*, 175 F.3d 994, 999, 50 U.S.P.Q.2d 1614, 1617 (Fed. Cir. 1999) (“Our case law makes clear that the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references.”); *In re Dance*, 160 F.3d 1339, 1343, 48 U.S.P.Q.2d 1635, 1637 (Fed. Cir. 1998) (there must be some motivation, suggestion, or teaching of the desirability of making the specific combination that was made by the applicant); *In re Fine*, 837 F.2d 1071, 1075, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988) (“teachings of references can be combined only if there is some suggestion or incentive to do so.”) (emphasis in original) (quoting *ACS Hosp. Sys., Inc. v. Montefiore Hosp.*, 732 F.2d 1572, 1577, 221 U.S.P.Q. 929, 933 (Fed. Cir. 1984)). The need for specificity pervades this authority. *See, e.g., In re Kotzab*, 217 F.3d 1365, 1371, 55 U.S.P.Q.2d 1313, 1317 (Fed. Cir. 2000) (“particular findings must be made as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed”); *In re Rouffet*, 149 F.3d 1350, 1359, 47 U.S.P.Q.2d 1453, 1457-58 (Fed. Cir. 1998) (“even when the level of skill in the art is high, the Board must identify specifically the principle, known to one of ordinary skill, that suggests the claimed combination. In other words, the Board must explain the reasons one of ordinary skill in the art would have been motivated to select the references and to combine them to render the claimed invention obvious.”)).

B. Technical Material Cited by Examiner Does Not Show or Suggest the Text of Independent Claim 1 and Dependent Claims 2-12 as Presented Herein; Notice of Allowance of Same Respectfully Requested

1. Independent Claim 1

Independent Claim 1 recites as follows:

"An item comprising:

an outer part including at least one outer material that is substantially opaque to visible light; and

an identifier including at least one three-dimensional configuration corresponding to the identifier, the at least one three-dimensional configuration being embedded within the at least one outer material and including at least one of

- (1) a substantially empty cavity in the at least one outer material, or
- (2) at least one identifying material filling at least part of a cavity in the at least one outer material and wherein the at least one outer material in which the at least one identifying material fills at least part of the cavity is substantially opaque to visible light."

As shown following, the technical material cited by Examiner does not recite the text of Independent Claim 1, and thus Applicant respectfully requests that Examiner allow Independent Claim 1 for at least those reasons.

a) Technical Material Cited by Examiner Does Not Show or Suggest the Text of Independent Claim 1

As set forth above, Independent Claim 1 recites as follows: "An item comprising: (a) an outer part including at least one outer material that is substantially opaque to visible light; and (b) an identifier including at least one three-dimensional configuration corresponding to the identifier, the at least one three-dimensional configuration being embedded within the at least one outer material and including at least one of (1) a substantially empty cavity in the at least one outer material, or (2) at least one identifying material filling at least part of a cavity in the at least one outer material and wherein the at least one outer material in which the at least one

identifying material fills at least part of the cavity is substantially opaque to visible light." ⁹

With respect to Independent Claim 1, Examiner has stated "Wallace teaches an item (plastic card) comprising an outer part including at least one outer material that is substantially opaque to visible light (record member 3); and an identifier including at least one three-dimensional configuration (indentations 7 and magnetic ink paste 9) corresponding to the identifier, the at least one three-dimensional configuration being embedded within the at least one outer material and including at least one of a substantially empty cavity in the at least one outer material (figure 2), or at least one identifying material filling at least part of a cavity in the at least one outer material and wherein the at least one outer material in which the at least one identifying material fills at least part of the cavity is substantially opaque to visible light; a method of making an item, the method comprising: forming at least one portion of the item from at least one structural material; and integrally with said forming the at least one portion, enclosing within the at least one structural material identifying information that identifies the item, the identifying information including at least one three-dimensional configuration including at least one of a void substantially shaped as the at least one three-dimensional configuration, the void defined by the at least one structural material, or an identifying material shaped as at least part of the at least one three-dimensional configuration, wherein the at least one structural material is substantially opaque to visible light; the item and method wherein the identifier identifies the item uniquely; the item and method wherein the at least one three-dimensional configuration is directly accessible by physically separating the at least one portion into at least two parts; the item wherein the at least one three-dimensional configuration is directly accessible only by disassembling the item; the item wherein the at least one identifying material emits identifying electromagnetic radiation when irradiated with specified electromagnetic radiation; the item wherein the identifying material comprises a security tag; the method wherein the void is substantially empty; the method wherein the identifying information identifies the item uniquely by including a serial number that is unique to the item; and the method wherein the structural material is substantially opaque to visible light." *See Examiner's Office Action*, p. 2-4 (6 February 2008). Applicant respectfully disagrees and traverses the rejection.

⁹ The lettering of the clauses herein is merely for sake of clarity of argument and should not be taken to imply any particular ordering of the clauses.

Applicant respectfully points out that Applicant has reviewed the portions of Wallace identified by Examiner, and so far as Applicant can discern, Wallace does not recite the text of Applicant's Independent Claim 1. Rather, the relevant portions of Wallace recite as follows:

A magnetically sensible record of data is prepared by indenting or embossing the surface of a non-magnetic receptor sheet, such as a plastic or cardboard card, with a linear series of indentations arranged in a binary code form. In one embodiment, the indentations are filled, as by squeegeeing with finely divided particles of a magnetically sensible material such as magnetic iron oxide and a binder therefor, and fixing the particles in the indentations as by drying or setting the binder when one is used or by overcoating with a plastic film. In another embodiment the card is first coated with the ferrite material so that the indentations are filled at the moment of impact, after which excess ferrite material is removed from the background areas as by wiping. The data record per se is also claimed. It is characterized by the absence of magnetic material between the individual bits of data, such that the card, when read, gives a high signal to noise ratio.

According to the present invention, a suitable base sheet such as card stock or a plastic is indented with a series of indentations with a suitable stylus such as one operated by a solenoid and designed to imprint the sheet as the sheet moves thereunder. The indentations are in a binary code form and their density can be 50 to 500 bits per inch or higher. The indentations are filled with a fluid ink or paste, or a dry powder containing particles of a magnetically sensible material such as a magnetic iron oxide, mumetal or carbonyl iron. This can be done by precoating the card in the area to be indented with a ferrite paste or ink, or by squeegeeing, wiping or doctoring the paste or powder over the surface of the base sheet following the indenting step. The paste, if one is used, is then allowed to cure. If dry powder is used, the indentations are subsequently overcoated as with a lacquer to secure the powder in place.

Since the magnetically sensible material is just level with or below the surface of the sheet, it is protected from physical abuse. This record is eminently suitable for use as a pocket credit card. The filled indentations may, of course, be further protected by an overlay, for example, of a plastic lacquer or by bonding a plastic film thereover. When the ferrite material is impacted into the indentation into a plastic card, the "spring-back" properties of the plastic cause the walls of the indentations to physically firmly hold the ferrite material in place.

The magnetic record is non-alterable and non-erasable, and is not subject to magnetic distortion or cancellation, especially if it is read with a reluctance type playback head. The record gives an excellent high signal to noise ratio because of the lack of magnetic material between recorded data bits.

The record can have on its face conventional man-readable information, so that the record can be stored, retrieved, and read either manually or by machine.

The record can be in the form of a tape with only one or two lines of recorded information thereon, or can be in the form of a sheet with a plurality of spaced lines thereon. The indentations made by the stylus can be at an angle of from 45.degree. to 90.degree. to the line of the series of bits. The width of the indentations should be greater than the width of the reading head to eliminate end distortion by the filled indentations. Usually the indentations will have a length greater than 0.0005 inches, a width as desired, usually 0.05 to 0.50 inches and be spaced 50 to 500 bits per inch. The indentations may have certain selected shapes in cross-section, such as square, triangular, round, etc., to achieve special effects.

This invention has particular utility for the manufacture of machine-readable credit cards, retail merchandise tags, airline documents, identification badges, stock certificates, bank checks, and the like, such as would be used in data processing and information transmission systems.

Referring to FIGS. 1 and 2, a plastic sheet, card stack, or the like 3, is passed beneath a recording head 4 comprising a solenoid driven stylus 5. The head is connected to a suitable impulse generator 6. The stylus strikes the surface of the record member 3, leaving a line of indentations 7 spaced in an alpha-numeric code form. The presence of an indentation, for example, may represent the binary "1" signal and the absence, the binary "0" signal. The record member can usually be passed under the recording head at a rate of 1 to 50 inches per second.

After being indented, the record member next has a magnetic ink paste 9 squeezed into the indentations, as by a blade 8. The surface of the card may then be wiped, if necessary, and the ink is allowed to cure. Suitable magnetic inks are:

1. Sinclair and Valentine's (Division of Martin Marietta) L. P. Mag. Black B 920456;
2. Lewis Robert's Inc. Magnetic Black F70460;
3. Kohl & Madden's Magnetic Black Q-9471.

As an example, with reference to FIG. 2, the recording density can be 100 bits per inch, the indentations can be triangular in cross-section as shown, having a depth d of 5 mils, a width w of 100 mils and a length l of 2 mils. Member 3 can be a plastic card 20 mils thick.

FIG. 3 illustrates a plastic pocket credit card 30. On its face it may contain conventional man-readable information such as the issuer's identity at 31 and its logo at 32. Information that identifies the holder of the card such as his name 33 and his account number 34 are also on the face of the card in visual form. According to this invention, in order to make the card machine readable in a

conventional manner as with a permeability, velocity, or flux reading apparatus, the card is imaged with a series of fine indentations 35, 36 and 37 in an alphanumeric binary code, which indentations are filled to approximately the surface of the card with finely divided particles of a magnetically sensible material held in situ by a suitable binder or cement or plastic overcoating. This encoded information can, for example, be used to identify the issuer at 37, and the card holder at 35 and 36. The card can be read by inserting it into a reading device and passing it under suitable reading heads, or by passing the reading heads thereover, the heads being aligned with strips 35, 36 and 37.

If the reader were in a department store and connected to a central computer containing the requisite information, it could be used to verify the account and to print through a printer the customer receipts, inventory control slips and the like, using a suitable encoding keyboard operated by the clerk for the direct entry of information concerning the particular purchase.

This invention is particularly suited to the adapting of the present type of embossed pocket credit cards to be machine readable. The holder of such a card can simply stop at a "conversion station" wherein the code of this invention can almost immediately be placed on a suitable predetermined portion of the surface of the card. It would not be necessary, therefore, for the holder of the card to surrender it for any length of time. This invention can also be used to regenerate business documents having a machine-readable code of one type, such as a punched card, to a document containing the alphanumeric magnetically sensible binary code of the present invention. All that is required is a normal reader adapted to handle the original coded document and a printer as described in conjunction with FIG. 1.

FIG. 4 illustrates another embodiment of the invention. A plastic card comprised of a plastic base layer 43 with a clear plastic top coating 42 is overcoated with a layer of a magnetic ink or paste (not shown) in the area to be indented, and the ink is partially pre-dried, if desired, to some extent. A blunt end stylus 41 is then used to indent the card in the manner previously described and force the ink 44 into the indentation. The depth d of the indentation can be about equal to, or slightly greater than, its length l , e.g., 54 mils. With the removal of the stylus, the spring-back properties of the plastic cause the walls to bulge inwardly as shown and firmly grip or bind the ink 44 in place, such that it cannot be dislodged, even with bending of the card. Thereafter, the excess ink is removed from the background areas as by wiping with a solvent-dampened rag or wiper.

See Abstract and Detailed Description Wallace, col. 1, line 35 through col. 2, line 25 and col. 2, line 39 through col. 4, line 5

As can be seen from the foregoing, the examiner-identified portions of Wallace do not recite the text of clauses (a) – (b) as recited in Independent Claim 1. For instance, clause (a)

recites "an outer part including at least one outer material that is substantially opaque to visible light." Emphasis added. Nowhere in Wallace is there a recitation of this clause. Rather, Wallace recites "a plastic sheet, card stack, or the like" (Wallace, col. 2, lines 39-40). Clause (b) recites "an identifier including at least one three-dimensional configuration corresponding to the identifier, the at least one three-dimensional configuration being embedded within the at least one outer material and including at least one of (1) a substantially empty cavity in the at least one outer material, or (2) at least one identifying material filling at least part of a cavity in the at least one outer material and wherein the at least one outer material in which the at least one identifying material fills at least part of the cavity is substantially opaque to visible light." Emphasis added. Similarly, nowhere in Wallace is there a recitation of this clause. Rather, col. 2, lines 43-51 recite "a line of indentations spaced in alpha-numeric code form...and...magnetic ink paste squeezed into the indentations."

Applicant has reviewed the Examiner cited portions of Wallace and is unable to locate a recitation of clauses (a) – (b) of Claim 1. Applicant further respectfully points out that the Examiner has provided no evidence or reason as to why the text of Wallace should be interpreted to teach clauses (a) – (b) of Independent Claim 1 as the Examiner alleges.

Given that Applicant has shown, above, what Wallace actually recites, the question thus naturally arises as to how Examiner saw Wallace as teaching clauses (a) – (b) of Independent Claim 1.

Applicant respectfully points out that the Applicant's Application is the only one objective examiner-cited document of record that shows or suggests what Examiner purports the reference to teach. From this and Wallace's express recitations (see above), it follows that Examiner is interpreting Wallace through the lens of Applicant's application, which is impermissible hindsight use. Thus, at present, Examiner's assertions regarding Wallace are untenable.

Accordingly, under the MPEP standards as set forth above, the Examiner has not established a *prima facie* case that art of record anticipates Independent Claim 1. Applicant respectfully asks Examiner to hold Independent Claim 1 allowable and to issue a Notice of Allowance of same.

2. Dependent Claims 2-12 Patentable for at Least Reasons of Dependency from Independent Claim 1

Claims 2-12 depend either directly or indirectly from Independent Claim 1. "A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers." *See* 35 U.S.C. § 112 paragraph 4. Consequently, Dependent Claims 2-12 are patentable for at least the reasons why Independent Claim 1 is patentable. Accordingly, Applicant respectfully requests that Examiner hold Dependent Claims 2-12 patentable for at least the foregoing reasons, and issue a Notice of Allowability on same.

C. Technical Material Cited by Examiner Does Not Show or Suggest the Text of Independent Claim 13 and Dependent Claims 14-21 as Presented Herein; Notice of Allowance of Same Respectfully Requested

1. Independent Claim 13

Independent Claim 13 recites as follows:

"A method of identifying the item of claim 1, the method of identifying comprising:

detecting the at least one three-dimensional configuration with a penetrating imaging tool, the detecting resulting in an output from the penetrating imaging tool; and

reading the identifying information by interpreting the output."

As shown following, the technical material cited by Examiner does not recite the text of Independent Claim 13, and thus Applicant respectfully requests that Examiner allow Independent Claim 13 for at least those reasons.

a) Technical Material Cited by Examiner Does Not Show or Suggest the Text of Independent Claim 13

As set forth above, Independent Claim 13 recites as follows: "A method of identifying the item of claim 1, the method of identifying comprising: (a) detecting the at least one three-dimensional configuration with a penetrating imaging tool, the detecting resulting in an output

from the penetrating imaging tool; and (b) reading the identifying information by interpreting the output." ¹⁰

With respect to Independent Claim 13, Examiner has stated "Wallace teaches an item (plastic card) comprising an outer part including at least one outer material that is substantially opaque to visible light (record member 3); and an identifier including at least one three-dimensional configuration (indentations 7 and magnetic ink paste 9) corresponding to the identifier, the at least one three-dimensional configuration being embedded within the at least one outer material and including at least one of a substantially empty cavity in the at least one outer material (figure 2), or at least one identifying material filling at least part of a cavity in the at least one outer material and wherein the at least one outer material in which the at least one identifying material fills at least part of the cavity is substantially opaque to visible light; a method of making an item, the method comprising: forming at least one portion of the item from at least one structural material; and integrally with said forming the at least one portion, enclosing within the at least one structural material identifying information that identifies the item, the identifying information including at least one three-dimensional configuration including at least one of a void substantially shaped as the at least one three-dimensional configuration, the void defined by the at least one structural material, or an identifying material shaped as at least part of the at least one three-dimensional configuration, wherein the at least one structural material is substantially opaque to visible light; the item and method wherein the identifier identifies the item uniquely; the item and method wherein the at least one three-dimensional configuration is directly accessible by physically separating the at least one portion into at least two parts; the item wherein the at least one three-dimensional configuration is directly accessible only by disassembling the item; the item wherein the at least one identifying material emits identifying electromagnetic radiation when irradiated with specified electromagnetic radiation; the item wherein the identifying material comprises a security tag; the method wherein the void is substantially empty; the method wherein the identifying information identifies the item uniquely by including a serial number that is unique to the item; and the method wherein the structural material is substantially opaque to visible light." *See Examiner's*

¹⁰ The lettering of the clauses herein is merely for sake of clarity of argument and should not be taken to imply any particular ordering of the clauses.

Office Action, p. 2-4 (6 February 2008). Applicant respectfully disagrees and traverses the rejection.

Applicant respectfully points out that Applicant has reviewed the portions of Wallace identified by Examiner, and so far as Applicant can discern, Wallace does not recite the text of Applicant's Independent Claim 13. Rather, the relevant portions of Wallace recite as follows:

A magnetically sensible record of data is prepared by indenting or embossing the surface of a non-magnetic receptor sheet, such as a plastic or cardboard card, with a linear series of indentations arranged in a binary code form. In one embodiment, the indentations are filled, as by squeegeeing with finely divided particles of a magnetically sensible material such as magnetic iron oxide and a binder therefor, and fixing the particles in the indentations as by drying or setting the binder when one is used or by overcoating with a plastic film. In another embodiment the card is first coated with the ferrite material so that the indentations are filled at the moment of impact, after which excess ferrite material is removed from the background areas as by wiping. The data record per se is also claimed. It is characterized by the absence of magnetic material between the individual bits of data, such that the card, when read, gives a high signal to noise ratio.

According to the present invention, a suitable base sheet such as card stock or a plastic is indented with a series of indentations with a suitable stylus such as one operated by a solenoid and designed to imprint the sheet as the sheet moves thereunder. The indentations are in a binary code form and their density can be 50 to 500 bits per inch or higher. The indentations are filled with a fluid ink or paste, or a dry powder containing particles of a magnetically sensible material such as a magnetic iron oxide, mumetal or carbonyl iron. This can be done by precoating the card in the area to be indented with a ferrite paste or ink, or by squeegeeing, wiping or doctoring the paste or powder over the surface of the base sheet following the indenting step. The paste, if one is used, is then allowed to cure. If dry powder is used, the indentations are subsequently overcoated as with a lacquer to secure the powder in place.

Since the magnetically sensible material is just level with or below the surface of the sheet, it is protected from physical abuse. This record is eminently suitable for use as a pocket credit card. The filled indentations may, of course, be further protected by an overlay, for example, of a plastic lacquer or by bonding a plastic film thereover. When the ferrite material is impacted into the indentation into a plastic card, the "spring-back" properties of the plastic cause the walls of the indentations to physically firmly hold the ferrite material in place.

The magnetic record is non-alterable and non-erasable, and is not subject to magnetic distortion or cancellation, especially if it is read with a reluctance type

playback head. The record gives an excellent high signal to noise ratio because of the lack of magnetic material between recorded data bits.

The record can have on its face conventional man-readable information, so that the record can be stored, retrieved, and read either manually or by machine.

The record can be in the form of a tape with only one or two lines of recorded information thereon, or can be in the form of a sheet with a plurality of spaced lines thereon. The indentations made by the stylus can be at an angle of from 45.degree. to 90.degree. to the line of the series of bits. The width of the indentations should be greater than the width of the reading head to eliminate end distortion by the filled indentations. Usually the indentations will have a length greater than 0.0005 inches, a width as desired, usually 0.05 to 0.50 inches and be spaced 50 to 500 bits per inch. The indentations may have certain selected shapes in cross-section, such as square, triangular, round, etc., to achieve special effects.

This invention has particular utility for the manufacture of machine-readable credit cards, retail merchandise tags, airline documents, identification badges, stock certificates, bank checks, and the like, such as would be used in data processing and information transmission systems.

Referring to FIGS. 1 and 2, a plastic sheet, card stack, or the like 3, is passed beneath a recording head 4 comprising a solenoid driven stylus 5. The head is connected to a suitable impulse generator 6. The stylus strikes the surface of the record member 3, leaving a line of indentations 7 spaced in an alpha-numeric code form. The presence of an indentation, for example, may represent the binary "1" signal and the absence, the binary "0" signal. The record member can usually be passed under the recording head at a rate of 1 to 50 inches per second.

After being indented, the record member next has a magnetic ink paste 9 squeezed into the indentations, as by a blade 8. The surface of the card may then be wiped, if necessary, and the ink is allowed to cure. Suitable magnetic inks are:

1. Sinclair and Valentine's (Division of Martin Marietta) L. P. Mag. Black B 920456;
2. Lewis Robert's Inc. Magnetic Black F70460;
3. Kohl & Madden's Magnetic Black Q-9471.

As an example, with reference to FIG. 2, the recording density can be 100 bits per inch, the indentations can be triangular in cross-section as shown, having a depth d of 5 mils, a width w of 100 mils and a length l of 2 mils. Member 3 can be a plastic card 20 mils thick.

FIG. 3 illustrates a plastic pocket credit card 30. On its face it may contain conventional man-readable information such as the issuer's identity at 31 and its logo at 32. Information that identifies the holder of the card such as his name 33

and his account number 34 are also on the face of the card in visual form. According to this invention, in order to make the card machine readable in a conventional manner as with a permeability, velocity, or flux reading apparatus, the card is imaged with a series of fine indentations 35, 36 and 37 in an alphanumeric binary code, which indentations are filled to approximately the surface of the card with finely divided particles of a magnetically sensible material held in situ by a suitable binder or cement or plastic overcoating. This encoded information can, for example, be used to identify the issuer at 37, and the card holder at 35 and 36. The card can be read by inserting it into a reading device and passing it under suitable reading heads, or by passing the reading heads thereover, the heads being aligned with strips 35, 36 and 37.

If the reader were in a department store and connected to a central computer containing the requisite information, it could be used to verify the account and to print through a printer the customer receipts, inventory control slips and the like, using a suitable encoding keyboard operated by the clerk for the direct entry of information concerning the particular purchase.

This invention is particularly suited to the adapting of the present type of embossed pocket credit cards to be machine readable. The holder of such a card can simply stop at a "conversion station" wherein the code of this invention can almost immediately be placed on a suitable predetermined portion of the surface of the card. It would not be necessary, therefore, for the holder of the card to surrender it for any length of time. This invention can also be used to regenerate business documents having a machine-readable code of one type, such as a punched card, to a document containing the alphanumeric magnetically sensible binary code of the present invention. All that is required is a normal reader adapted to handle the original coded document and a printer as described in conjunction with FIG. 1.

FIG. 4 illustrates another embodiment of the invention. A plastic card comprised of a plastic base layer 43 with a clear plastic top coating 42 is overcoated with a layer of a magnetic ink or paste (not shown) in the area to be indented, and the ink is partially pre-dried, if desired, to some extent. A blunt end stylus 41 is then used to indent the card in the manner previously described and force the ink 44 into the indentation. The depth d of the indentation can be about equal to, or slightly greater than, its length l , e.g., 54 mils. With the removal of the stylus, the spring-back properties of the plastic cause the walls to bulge inwardly as shown and firmly grip or bind the ink 44 in place, such that it cannot be dislodged, even with bending of the card. Thereafter, the excess ink is removed from the background areas as by wiping with a solvent-dampened rag or wiper.

See Abstract and Detailed Description Wallace, col. 1, line 35 through col. 2, line 25 and col. 2, line 39 through col. 4, line 5

As can be seen from the foregoing, the examiner-identified portions of Wallace do not recite the text of clauses (a) – (b) as recited in Independent Claim 13. For instance, clause (a) recites "detecting the at least one three-dimensional configuration with a penetrating imaging tool, the detecting resulting in an output from the penetrating imaging tool." Emphasis added. Nowhere in Wallace is there a recitation of this clause. Rather, Wallace recites "[t]he card can be read by inserting it into a reading device and passing it under suitable reading heads, or by passing the reading heads thereover, the heads being aligned with strips 35, 36 and 37" (Wallace, col. 3, lines 12-14). Clause (b) recites "reading the identifying information by interpreting the output." Emphasis added. Similarly, nowhere in Wallace is there a recitation of this clause. Rather, col. 3, lines 12-14 recite "[t]he card can be read by inserting it into a reading device and passing it under suitable reading heads, or by passing the reading heads thereover, the heads being aligned with strips 35, 36 and 37."

Applicant has reviewed the Examiner cited portions of Wallace and is unable to locate a recitation of clauses (a) – (b) of Claim 13. Applicant further respectfully points out that the Examiner has provided no evidence or reason as to why the text of Wallace should be interpreted to teach clauses (a) – (b) of Independent Claim 13 as the Examiner alleges.

Given that Applicant has shown, above, what Wallace actually recites, the question thus naturally arises as to how Examiner saw Wallace as teaching clauses (a) – (b) of Independent Claim 13.

Applicant respectfully points out that the Applicant's Application is the only one objective examiner-cited document of record that shows or suggests what Examiner purports the reference to teach. From this and Wallace's express recitations (see above), it follows that Examiner is interpreting Wallace through the lens of Applicant's application, which is impermissible hindsight use. Thus, at present, Examiner's assertions regarding Wallace are untenable.

Accordingly, under the MPEP standards as set forth above, the Examiner has not established a *prima facie* case that art of record anticipates Independent Claim 13. Applicant respectfully asks Examiner to hold Independent Claim 13 allowable and to issue a Notice of Allowance of same.

2. Dependent Claims 14-21 Patentable for at Least Reasons of Dependency from Independent Claim 13

Claims 14-21 depend either directly or indirectly from Independent Claim 13. "A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers." *See* 35 U.S.C. § 112 paragraph 4. Consequently, Dependent Claims 14-21 are patentable for at least the reasons why Independent Claim 13 is patentable. Accordingly, Applicant respectfully requests that Examiner hold Dependent Claims 14-21 patentable for at least the foregoing reasons, and issue a Notice of Allowability on same.

D. Technical Material Cited by Examiner Does Not Show or Suggest the Text of Independent Claim 22 and Dependent Claims 23-33 as Presented Herein; Notice of Allowance of Same Respectfully Requested

1. Independent Claim 22

Independent Claim 22 recites as follows:

"A method of making an item, the method comprising:

forming at least one portion of the item from at least one structural material; and
integrally with said forming the at least one portion, enclosing within the at least one structural material identifying information that identifies the item, the identifying information including at least one three-dimensional configuration corresponding to the identifying information, the at least one three-dimensional configuration including at least one of

- (1) a void substantially shaped as the at least one three-dimensional configuration, the void defined by the at least one structural material, or
- (2) an identifying material substantially shaped as at least part of the at least one three-dimensional configuration, wherein the at least one structural material is substantially opaque to visible light."

As shown following, the technical material cited by Examiner does not recite the text of Independent Claim 22, and thus Applicant respectfully requests that Examiner allow Independent Claim 22 for at least those reasons.

a) Technical Material Cited by Examiner Does Not Show or Suggest the Text of Independent Claim 22

As set forth above, Independent Claim 22 recites as follows: "A method of making an item, the method comprising: (a) forming at least one portion of the item from at least one structural material; and (b) integrally with said forming the at least one portion, enclosing within the at least one structural material identifying information that identifies the item, the identifying information including at least one three-dimensional configuration corresponding to the identifying information, the at least one three-dimensional configuration including at least one of (1) a void substantially shaped as the at least one three-dimensional configuration, the void defined by the at least one structural material, or (2) an identifying material substantially shaped as at least part of the at least one three-dimensional configuration, wherein the at least one structural material is substantially opaque to visible light." ¹¹

With respect to Independent Claim 22, Examiner has stated "Wallace teaches an item (plastic card) comprising an outer part including at least one outer material that is substantially opaque to visible light (record member 3); and an identifier including at least one three-dimensional configuration (indentations 7 and magnetic ink paste 9) corresponding to the identifier, the at least one three-dimensional configuration being embedded within the at least one outer material and including at least one of a substantially empty cavity in the at least one outer material (figure 2), or at least one identifying material filling at least part of a cavity in the at least one outer material and wherein the at least one outer material in which the at least one identifying material fills at least part of the cavity is substantially opaque to visible light; a method of making an item, the method comprising: forming at least one portion of the item from at least one structural material; and integrally with said forming the at least one portion, enclosing within the at least one structural material identifying information that identifies the item, the identifying information including at least one three-dimensional configuration including at least one of a void substantially shaped as the at least one three-dimensional configuration, the void defined by the at least one structural material, or an identifying material

¹¹ The lettering of the clauses herein is merely for sake of clarity of argument and should not be taken to imply any particular ordering of the clauses.

shaped as at least part of the at least one three-dimensional configuration, wherein the at least one structural material is substantially opaque to visible light; the item and method wherein the identifier identifies the item uniquely; the item and method wherein the at least one three-dimensional configuration is directly accessible by physically separating the at least one portion into at least two parts; the item wherein the at least one three-dimensional configuration is directly accessible only by disassembling the item; the item wherein the at least one identifying material emits identifying electromagnetic radiation when irradiated with specified electromagnetic radiation; the item wherein the identifying material comprises a security tag; the method wherein the void is substantially empty; the method wherein the identifying information identifies the item uniquely by including a serial number that is unique to the item; and the method wherein the structural material is substantially opaque to visible light." *See Examiner's Office Action*, p. 2-4 (6 February 2008). Applicant respectfully disagrees and traverses the rejection.

Applicant respectfully points out that Applicant has reviewed the portions of Wallace identified by Examiner, and so far as Applicant can discern, Wallace does not recite the text of Applicant's Independent Claim 22. Rather, the relevant portions of Wallace recite as follows:

A magnetically sensible record of data is prepared by indenting or embossing the surface of a non-magnetic receptor sheet, such as a plastic or cardboard card, with a linear series of indentations arranged in a binary code form. In one embodiment, the indentations are filled, as by squeegeeing with finely divided particles of a magnetically sensible material such as magnetic iron oxide and a binder therefor, and fixing the particles in the indentations as by drying or setting the binder when one is used or by overcoating with a plastic film. In another embodiment the card is first coated with the ferrite material so that the indentations are filled at the moment of impact, after which excess ferrite material is removed from the background areas as by wiping. The data record per se is also claimed. It is characterized by the absence of magnetic material between the individual bits of data, such that the card, when read, gives a high signal to noise ratio.

According to the present invention, a suitable base sheet such as card stock or a plastic is indented with a series of indentations with a suitable stylus such as one operated by a solenoid and designed to imprint the sheet as the sheet moves thereunder. The indentations are in a binary code form and their density can be 50 to 500 bits per inch or higher. The indentations are filled with a fluid ink or paste, or a dry powder containing particles of a magnetically sensible material such as a magnetic iron oxide, mumetal or carbonyl iron. This can be done by precoating

the card in the area to be indented with a ferrite paste or ink, or by squeegeeing, wiping or doctoring the paste or powder over the surface of the base sheet following the indenting step. The paste, if one is used, is then allowed to cure. If dry powder is used, the indentations are subsequently overcoated as with a lacquer to secure the powder in place.

Since the magnetically sensible material is just level with or below the surface of the sheet, it is protected from physical abuse. This record is eminently suitable for use as a pocket credit card. The filled indentations may, of course, be further protected by an overlay, for example, of a plastic lacquer or by bonding a plastic film thereover. When the ferrite material is impacted into the indentation into a plastic card, the "spring-back" properties of the plastic cause the walls of the indentations to physically firmly hold the ferrite material in place.

The magnetic record is non-alterable and non-erasable, and is not subject to magnetic distortion or cancellation, especially if it is read with a reluctance type playback head. The record gives an excellent high signal to noise ratio because of the lack of magnetic material between recorded data bits.

The record can have on its face conventional man-readable information, so that the record can be stored, retrieved, and read either manually or by machine.

The record can be in the form of a tape with only one or two lines of recorded information thereon, or can be in the form of a sheet with a plurality of spaced lines thereon. The indentations made by the stylus can be at an angle of from 45.degree. to 90.degree. to the line of the series of bits. The width of the indentations should be greater than the width of the reading head to eliminate end distortion by the filled indentations. Usually the indentations will have a length greater than 0.0005 inches, a width as desired, usually 0.05 to 0.50 inches and be spaced 50 to 500 bits per inch. The indentations may have certain selected shapes in cross-section, such as square, triangular, round, etc., to achieve special effects.

This invention has particular utility for the manufacture of machine-readable credit cards, retail merchandise tags, airline documents, identification badges, stock certificates, bank checks, and the like, such as would be used in data processing and information transmission systems.

Referring to FIGS. 1 and 2, a plastic sheet, card stack, or the like 3, is passed beneath a recording head 4 comprising a solenoid driven stylus 5. The head is connected to a suitable impulse generator 6. The stylus strikes the surface of the record member 3, leaving a line of indentations 7 spaced in an alpha-numeric code form. The presence of an indentation, for example, may represent the binary "1" signal and the absence, the binary "0" signal. The record member can usually be passed under the recording head at a rate of 1 to 50 inches per second.

After being indented, the record member next has a magnetic ink paste 9 squeezed

into the indentations, as by a blade 8. The surface of the card may then be wiped, if necessary, and the ink is allowed to cure. Suitable magnetic inks are:

1. Sinclair and Valentine's (Division of Martin Marietta) L. P. Mag. Black B 920456;
2. Lewis Robert's Inc. Magnetic Black F70460;
3. Kohl & Madden's Magnetic Black Q-9471.

As an example, with reference to FIG. 2, the recording density can be 100 bits per inch, the indentations can be triangular in cross-section as shown, having a depth d of 5 mils, a width w of 100 mils and a length l of 2 mils. Member 3 can be a plastic card 20 mils thick.

FIG. 3 illustrates a plastic pocket credit card 30. On its face it may contain conventional man-readable information such as the issuer's identity at 31 and its logo at 32. Information that identifies the holder of the card such as his name 33 and his account number 34 are also on the face of the card in visual form. According to this invention, in order to make the card machine readable in a conventional manner as with a permeability, velocity, or flux reading apparatus, the card is imaged with a series of fine indentations 35, 36 and 37 in an alphanumeric binary code, which indentations are filled to approximately the surface of the card with finely divided particles of a magnetically sensible material held in situ by a suitable binder or cement or plastic overcoating. This encoded information can, for example, be used to identify the issuer at 37, and the card holder at 35 and 36. The card can be read by inserting it into a reading device and passing it under suitable reading heads, or by passing the reading heads thereover, the heads being aligned with strips 35, 36 and 37.

If the reader were in a department store and connected to a central computer containing the requisite information, it could be used to verify the account and to print through a printer the customer receipts, inventory control slips and the like, using a suitable encoding keyboard operated by the clerk for the direct entry of information concerning the particular purchase.

This invention is particularly suited to the adapting of the present type of embossed pocket credit cards to be machine readable. The holder of such a card can simply stop at a "conversion station" wherein the code of this invention can almost immediately be placed on a suitable predetermined portion of the surface of the card. It would not be necessary, therefore, for the holder of the card to surrender it for any length of time. This invention can also be used to regenerate business documents having a machine-readable code of one type, such as a punched card, to a document containing the alphanumeric magnetically sensible binary code of the present invention. All that is required is a normal reader adapted to handle the original coded document and a printer as described in conjunction with FIG. 1.

FIG. 4 illustrates another embodiment of the invention. A plastic card comprised of a plastic base layer 43 with a clear plastic top coating 42 is overcoated with a layer of a magnetic ink or paste (not shown) in the area to be indented, and the ink is partially pre-dried, if desired, to some extent. A blunt end stylus 41 is then used to indent the card in the manner previously described and force the ink 44 into the indentation. The depth d of the indentation can be about equal to, or slightly greater than, its length l , e.g., 54 mils. With the removal of the stylus, the spring-back properties of the plastic cause the walls to bulge inwardly as shown and firmly grip or bind the ink 44 in place, such that it cannot be dislodged, even with bending of the card. Thereafter, the excess ink is removed from the background areas as by wiping with a solvent-dampened rag or wiper.

See Abstract and Detailed Description Wallace, col. 1, line 35 through col. 2, line 25 and col. 2, line 39 through col. 4, line 5

As can be seen from the foregoing, the examiner-identified portions of Wallace do not recite the text of clauses (a) – (b) as recited in Independent Claim 22. For instance, clause (a) recites "forming at least one portion of the item from at least one structural material." Emphasis added. Nowhere in Wallace is there a recitation of this clause. Rather, Wallace recites "a plastic sheet, card stack, or the like 3, is passed beneath a recording head 4 comprising a solenoid driven stylus 5....The stylus strikes the surface of the record member 3, leaving a line of indentations 7 spaced in an alpha-numeric code form" (Wallace, col. 2, lines 39-41 and 42-45). Clause (b) recites "integrally with said forming the at least one portion, enclosing within the at least one structural material identifying information that identifies the item, the identifying information including at least one three-dimensional configuration corresponding to the identifying information, the at least one three-dimensional configuration including at least one of (1) a void substantially shaped as the at least one three-dimensional configuration, the void defined by the at least one structural material, or (2) an identifying material substantially shaped as at least part of the at least one three-dimensional configuration, wherein the at least one structural material is substantially opaque to visible light." Emphasis added. Similarly, nowhere in Wallace is there a recitation of this clause. Rather, col. 2, lines 39-41, 42-45, and 50-52 and col. 3, lines 12-14 recite " a plastic sheet, card stack, or the like 3, is passed beneath a recording head 4 comprising a solenoid driven stylus 5....The stylus strikes the surface of the record member 3, leaving a line of indentations 7 spaced in an alpha-numeric code form....After being indented, the record member next has a magnetic ink paste 9 squeezed into the indentations, as by a blade

8.... This encoded information can, for example, be used to identify the issuer at 37, and the card holder at 35 and 36."

Applicant has reviewed the Examiner cited portions of Wallace and is unable to locate a recitation of clauses (a) – (b) of Claim 22. Applicant further respectfully points out that the Examiner has provided no evidence or reason as to why the text of Wallace should be interpreted to teach clauses (a) – (b) of Independent Claim 22 as the Examiner alleges.

Given that Applicant has shown, above, what Wallace actually recites, the question thus naturally arises as to how Examiner saw Wallace as teaching clauses (a) – (b) of Independent Claim 22.

Applicant respectfully points out that the Applicant's Application is the only one objective examiner-cited document of record that shows or suggests what Examiner purports the reference to teach. From this and Wallace's express recitations (see above), it follows that Examiner is interpreting Wallace through the lens of Applicant's application, which is impermissible hindsight use. Thus, at present, Examiner's assertions regarding Wallace are untenable.

Accordingly, under the MPEP standards as set forth above, the Examiner has not established a *prima facie* case that art of record anticipates Independent Claim 22. Applicant respectfully asks Examiner to hold Independent Claim 22 allowable and to issue a Notice of Allowance of same.

2. Dependent Claims 23-33 Patentable for at Least Reasons of Dependency from Independent Claim 22

Claims 23-33 depend either directly or indirectly from Independent Claim 22. "A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers." *See* 35 U.S.C. § 112 paragraph 4. Consequently, Dependent Claims 23-33 are patentable for at least the reasons why Independent Claim 22 is patentable. Accordingly, Applicant respectfully requests that Examiner hold Dependent Claims 23-33 patentable for at least the foregoing reasons, and issue a Notice of Allowability on same.

E. Technical Material Cited by Examiner Does Not Show or Suggest the Text of Independent Claim 34 and Dependent Claims 35-36 as Presented Herein; Notice of Allowance of Same Respectfully Requested

1. Independent Claim 34

Independent Claim 34 recites as follows:

“A method of making an item, the method comprising:

forming at least one portion of the item from at least one structural material; and
integrally with the forming the at least one portion, enclosing within the at least structural material a void substantially shaped as at least one three dimensional configuration corresponding to identifying information that identifies the item, the void being defined by the at least one structural material.”

As shown following, the technical material cited by Examiner does not recite the text of Independent Claim 34, and thus Applicant respectfully requests that Examiner allow Independent Claim 34 for at least those reasons.

a) Technical Material Cited by Examiner Does Not Show or Suggest the Text of Independent Claim 34

As set forth above, Independent Claim 34 recites as follows: "A method of making an item, the method comprising: (a) forming at least one portion of the item from at least one structural material; and (b) integrally with the forming the at least one portion, enclosing within the at least structural material a void substantially shaped as at least one three dimensional configuration corresponding to identifying information that identifies the item, the void being defined by the at least one structural material." ¹²

With respect to Independent Claim 34, Examiner has stated "Wallace teaches an item (plastic card) comprising an outer part including at least one outer material that is substantially opaque to visible light (record member 3); and an identifier including at least one three-

¹² The lettering of the clauses herein is merely for sake of clarity of argument and should not be taken to imply any particular ordering of the clauses.

dimensional configuration (indentations 7 and magnetic ink paste 9) corresponding to the identifier, the at least one three-dimensional configuration being embedded within the at least one outer material and including at least one of a substantially empty cavity in the at least one outer material (figure 2), or at least one identifying material filling at least part of a cavity in the at least one outer material and wherein the at least one outer material in which the at least one identifying material fills at least part of the cavity is substantially opaque to visible light; a method of making an item, the method comprising: forming at least one portion of the item from at least one structural material; and integrally with said forming the at least one portion, enclosing within the at least one structural material identifying information that identifies the item, the identifying information including at least one three-dimensional configuration including at least one of a void substantially shaped as the at least one three-dimensional configuration, the void defined by the at least one structural material, or an identifying material shaped as at least part of the at least one three-dimensional configuration, wherein the at least one structural material is substantially opaque to visible light; the item and method wherein the identifier identifies the item uniquely; the item and method wherein the at least one three-dimensional configuration is directly accessible by physically separating the at least one portion into at least two parts; the item wherein the at least one three-dimensional configuration is directly accessible only by disassembling the item; the item wherein the at least one identifying material emits identifying electromagnetic radiation when irradiated with specified electromagnetic radiation; the item wherein the identifying material comprises a security tag; the method wherein the void is substantially empty; the method wherein the identifying information identifies the item uniquely by including a serial number that is unique to the item; and the method wherein the structural material is substantially opaque to visible light." *See Examiner's Office Action*, p. 2-4 (6 February 2008). Applicant respectfully disagrees and traverses the rejection.

Applicant respectfully points out that Applicant has reviewed the portions of Wallace identified by Examiner, and so far as Applicant can discern, Wallace does not recite the text of Applicant's Independent Claim 34. Rather, the relevant portions of Wallace recite as follows:

A magnetically sensible record of data is prepared by indenting or embossing the surface of a non-magnetic receptor sheet, such as a plastic or cardboard card, with a linear series of indentations arranged in a binary code form. In one embodiment,

the indentations are filled, as by squeegeeing with finely divided particles of a magnetically sensible material such as magnetic iron oxide and a binder therefor, and fixing the particles in the indentations as by drying or setting the binder when one is used or by overcoating with a plastic film. In another embodiment the card is first coated with the ferrite material so that the indentations are filled at the moment of impact, after which excess ferrite material is removed from the background areas as by wiping. The data record per se is also claimed. It is characterized by the absence of magnetic material between the individual bits of data, such that the card, when read, gives a high signal to noise ratio.

According to the present invention, a suitable base sheet such as card stock or a plastic is indented with a series of indentations with a suitable stylus such as one operated by a solenoid and designed to imprint the sheet as the sheet moves thereunder. The indentations are in a binary code form and their density can be 50 to 500 bits per inch or higher. The indentations are filled with a fluid ink or paste, or a dry powder containing particles of a magnetically sensible material such as a magnetic iron oxide, mumetal or carbonyl iron. This can be done by precoating the card in the area to be indented with a ferrite paste or ink, or by squeegeeing, wiping or doctoring the paste or powder over the surface of the base sheet following the indenting step. The paste, if one is used, is then allowed to cure. If dry powder is used, the indentations are subsequently overcoated as with a lacquer to secure the powder in place.

Since the magnetically sensible material is just level with or below the surface of the sheet, it is protected from physical abuse. This record is eminently suitable for use as a pocket credit card. The filled indentations may, of course, be further protected by an overlay, for example, of a plastic lacquer or by bonding a plastic film thereover. When the ferrite material is impacted into the indentation into a plastic card, the "spring-back" properties of the plastic cause the walls of the indentations to physically firmly hold the ferrite material in place.

The magnetic record is non-alterable and non-erasable, and is not subject to magnetic distortion or cancellation, especially if it is read with a reluctance type playback head. The record gives an excellent high signal to noise ratio because of the lack of magnetic material between recorded data bits.

The record can have on its face conventional man-readable information, so that the record can be stored, retrieved, and read either manually or by machine.

The record can be in the form of a tape with only one or two lines of recorded information thereon, or can be in the form of a sheet with a plurality of spaced lines thereon. The indentations made by the stylus can be at an angle of from 45.degree. to 90.degree. to the line of the series of bits. The width of the indentations should be greater than the width of the reading head to eliminate end distortion by the filled indentations. Usually the indentations will have a length

greater than 0.0005 inches, a width as desired, usually 0.05 to 0.50 inches and be spaced 50 to 500 bits per inch. The indentations may have certain selected shapes in cross-section, such as square, triangular, round, etc., to achieve special effects.

This invention has particular utility for the manufacture of machine-readable credit cards, retail merchandise tags, airline documents, identification badges, stock certificates, bank checks, and the like, such as would be used in data processing and information transmission systems.

Referring to FIGS. 1 and 2, a plastic sheet, card stack, or the like 3, is passed beneath a recording head 4 comprising a solenoid driven stylus 5. The head is connected to a suitable impulse generator 6. The stylus strikes the surface of the record member 3, leaving a line of indentations 7 spaced in an alpha-numeric code form. The presence of an indentation, for example, may represent the binary "1" signal and the absence, the binary "0" signal. The record member can usually be passed under the recording head at a rate of 1 to 50 inches per second.

After being indented, the record member next has a magnetic ink paste 9 squeezed into the indentations, as by a blade 8. The surface of the card may then be wiped, if necessary, and the ink is allowed to cure. Suitable magnetic inks are:

1. Sinclair and Valentine's (Division of Martin Marietta) L. P. Mag. Black B 920456;
2. Lewis Robert's Inc. Magnetic Black F70460;
3. Kohl & Madden's Magnetic Black Q-9471.

As an example, with reference to FIG. 2, the recording density can be 100 bits per inch, the indentations can be triangular in cross-section as shown, having a depth d of 5 mils, a width w of 100 mils and a length l of 2 mils. Member 3 can be a plastic card 20 mils thick.

FIG. 3 illustrates a plastic pocket credit card 30. On its face it may contain conventional man-readable information such as the issuer's identity at 31 and its logo at 32. Information that identifies the holder of the card such as his name 33 and his account number 34 are also on the face of the card in visual form. According to this invention, in order to make the card machine readable in a conventional manner as with a permeability, velocity, or flux reading apparatus, the card is imaged with a series of fine indentations 35, 36 and 37 in an alpha-numeric binary code, which indentations are filled to approximately the surface of the card with finely divided particles of a magnetically sensible material held in situ by a suitable binder or cement or plastic overcoating. This encoded information can, for example, be used to identify the issuer at 37, and the card holder at 35 and 36. The card can be read by inserting it into a reading device and passing it under suitable reading heads, or by passing the reading heads thereover, the heads being aligned with strips 35, 36 and 37.

If the reader were in a department store and connected to a central computer containing the requisite information, it could be used to verify the account and to print through a printer the customer receipts, inventory control slips and the like, using a suitable encoding keyboard operated by the clerk for the direct entry of information concerning the particular purchase.

This invention is particularly suited to the adapting of the present type of embossed pocket credit cards to be machine readable. The holder of such a card can simply stop at a "conversion station" wherein the code of this invention can almost immediately be placed on a suitable predetermined portion of the surface of the card. It would not be necessary, therefore, for the holder of the card to surrender it for any length of time. This invention can also be used to regenerate business documents having a machine-readable code of one type, such as a punched card, to a document containing the alphanumeric magnetically sensible binary code of the present invention. All that is required is a normal reader adapted to handle the original coded document and a printer as described in conjunction with FIG. 1.

FIG. 4 illustrates another embodiment of the invention. A plastic card comprised of a plastic base layer 43 with a clear plastic top coating 42 is overcoated with a layer of a magnetic ink or paste (not shown) in the area to be indented, and the ink is partially pre-dried, if desired, to some extent. A blunt end stylus 41 is then used to indent the card in the manner previously described and force the ink 44 into the indentation. The depth d of the indentation can be about equal to, or slightly greater than, its length l , e.g., 54 mils. With the removal of the stylus, the spring-back properties of the plastic cause the walls to bulge inwardly as shown and firmly grip or bind the ink 44 in place, such that it cannot be dislodged, even with bending of the card. Thereafter, the excess ink is removed from the background areas as by wiping with a solvent-dampened rag or wiper.

See Abstract and Detailed Description Wallace, col. 1, line 35 through col. 2, line 25 and col. 2, line 39 through col. 4, line 5

As can be seen from the foregoing, the examiner-identified portions of Wallace do not recite the text of clauses (a) – (b) as recited in Independent Claim 34. For instance, clause (a) recites "forming at least one portion of the item from at least one structural material." Emphasis added. Nowhere in Wallace is there a recitation of this clause. Rather, Wallace recites "a plastic sheet, card stack, or the like 3, is passed beneath a recording head 4 comprising a solenoid driven stylus 5....The stylus strikes the surface of the record member 3, leaving a line of indentations 7 spaced in an alpha-numeric code form" (Wallace, col. 2, lines 39-41 and 42-45). Clause (b) recites "integrally with the forming the at least one portion, enclosing within the at least

structural material a void substantially shaped as at least one three dimensional configuration corresponding to identifying information that identifies the item, the void being defined by the at least one structural material." Emphasis added. Similarly, nowhere in Wallace is there a recitation of this clause. Rather, col. 2, lines 39-41, 42-45, and 50-52 and col. 3, lines 12-14 recite " a plastic sheet, card stack, or the like 3, is passed beneath a recording head 4 comprising a solenoid driven stylus 5....The stylus strikes the surface of the record member 3, leaving a line of indentations 7 spaced in an alpha-numeric code form....After being indented, the record member next has a magnetic ink paste 9 squeezed into the indentations, as by a blade 8.... This encoded information can, for example, be used to identify the issuer at 37, and the card holder at 35 and 36."

Applicant has reviewed the Examiner cited portions of Wallace and is unable to locate a recitation of clauses (a) – (b) of Claim 34. Applicant further respectfully points out that the Examiner has provided no evidence or reason as to why the text of Wallace should be interpreted to teach clauses (a) – (b) of Independent Claim 34 as the Examiner alleges.

Given that Applicant has shown, above, what Wallace actually recites, the question thus naturally arises as to how Examiner saw Wallace as teaching clauses (a) – (b) of Independent Claim 34.

Applicant respectfully points out that the Applicant's Application is the only one objective examiner-cited document of record that shows or suggests what Examiner purports the reference to teach. From this and Wallace's express recitations (see above), it follows that Examiner is interpreting Wallace through the lens of Applicant's application, which is impermissible hindsight use. Thus, at present, Examiner's assertions regarding Wallace are untenable.

Accordingly, under the MPEP standards as set forth above, the Examiner has not established a *prima facie* case that art of record anticipates Independent Claim 34. Applicant respectfully asks Examiner to hold Independent Claim 34 allowable and to issue a Notice of Allowance of same.

2. Dependent Claims 35-36 Patentable for at Least Reasons of Dependency from Independent Claim 34

Claims 35-36 depend either directly or indirectly from Independent Claim 34. "A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers." *See* 35 U.S.C. § 112 paragraph 4. Consequently, Dependent Claims 35-36 are patentable for at least the reasons why Independent Claim 34 is patentable. Accordingly, Applicant respectfully requests that Examiner hold Dependent Claims 35-36 patentable for at least the foregoing reasons, and issue a Notice of Allowability on same.

F. Technical Material Cited by Examiner Does Not Show or Suggest the Text of Independent Claim 37 and Dependent Claims 38-42 as Presented Herein; Notice of Allowance of Same Respectfully Requested

1. Independent Claim 37

Independent Claim 37 recites as follows:

"A method of forming a computer-readable representation of an item, the method comprising:

forming an outer surface computer-readable representation part including a representation of the outer surface of the item;

forming an identifying surface computer-readable representation part of at least one closed three-dimensional identifying surface, the at least one identifying surface corresponding to identifying information that identifies the item, and the at least one identifying surface being contained within the outer surface; and

associating the outer surface computer-readable representation part and the identifying surface computer-readable representation part."

As shown following, the technical material cited by Examiner does not recite the text of Independent Claim 37, and thus Applicant respectfully requests that Examiner allow Independent Claim 37 for at least those reasons.

**a) Technical Material Cited by Examiner Does Not Show or
Suggest the Text of Independent Claim 37**

As set forth above, Independent Claim 37 recites as follows: "A method of forming a computer-readable representation of an item, the method comprising: (a) forming an outer surface computer-readable representation part including a representation of the outer surface of the item; (b) forming an identifying surface computer-readable representation part of at least one closed three-dimensional identifying surface, the at least one identifying surface corresponding to identifying information that identifies the item, and the at least one identifying surface being contained within the outer surface; and (c) associating the outer surface computer-readable representation part and the identifying surface computer-readable representation part." ¹³

With respect to Independent Claim 37, Examiner has stated "Wallace teaches an item (plastic card) comprising an outer part including at least one outer material that is substantially opaque to visible light (record member 3); and an identifier including at least one three-dimensional configuration (indentations 7 and magnetic ink paste 9) corresponding to the identifier, the at least one three-dimensional configuration being embedded within the at least one outer material and including at least one of a substantially empty cavity in the at least one outer material (figure 2), or at least one identifying material filling at least part of a cavity in the at least one outer material and wherein the at least one outer material in which the at least one identifying material fills at least part of the cavity is substantially opaque to visible light; a method of making an item, the method comprising: forming at least one portion of the item from at least one structural material; and integrally with said forming the at least one portion, enclosing within the at least one structural material identifying information that identifies the item, the identifying information including at least one three-dimensional configuration including at least one of a void substantially shaped as the at least one three-dimensional configuration, the void defined by the at least one structural material, or an identifying material shaped as at least part of the at least one three-dimensional configuration, wherein the at least one structural material is substantially opaque to visible light; the item and method wherein the identifier identifies the item uniquely; the item and method wherein the at least one three-dimensional configuration is directly accessible by physically separating the at least one portion

¹³ The lettering of the clauses herein is merely for sake of clarity of argument and should not be taken to imply any particular ordering of the clauses.

into at least two parts; the item wherein the at least one three-dimensional configuration is directly accessible only by disassembling the item; the item wherein the at least one identifying material emits identifying electromagnetic radiation when irradiated with specified electromagnetic radiation; the item wherein the identifying material comprises a security tag; the method wherein the void is substantially empty; the method wherein the identifying information identifies the item uniquely by including a serial number that is unique to the item; and the method wherein the structural material is substantially opaque to visible light." *See Examiner's Office Action*, p. 2-4 (6 February 2008). Applicant respectfully disagrees and traverses the rejection.

Applicant respectfully points out that Applicant has reviewed the portions of Wallace identified by Examiner, and so far as Applicant can discern, Wallace does not recite the text of Applicant's Independent Claim 37. Rather, the relevant portions of Wallace recite as follows:

A magnetically sensible record of data is prepared by indenting or embossing the surface of a non-magnetic receptor sheet, such as a plastic or cardboard card, with a linear series of indentations arranged in a binary code form. In one embodiment, the indentations are filled, as by squeegeeing with finely divided particles of a magnetically sensible material such as magnetic iron oxide and a binder therefor, and fixing the particles in the indentations as by drying or setting the binder when one is used or by overcoating with a plastic film. In another embodiment the card is first coated with the ferrite material so that the indentations are filled at the moment of impact, after which excess ferrite material is removed from the background areas as by wiping. The data record per se is also claimed. It is characterized by the absence of magnetic material between the individual bits of data, such that the card, when read, gives a high signal to noise ratio.

According to the present invention, a suitable base sheet such as card stock or a plastic is indented with a series of indentations with a suitable stylus such as one operated by a solenoid and designed to imprint the sheet as the sheet moves thereunder. The indentations are in a binary code form and their density can be 50 to 500 bits per inch or higher. The indentations are filled with a fluid ink or paste, or a dry powder containing particles of a magnetically sensible material such as a magnetic iron oxide, mumetal or carbonyl iron. This can be done by precoating the card in the area to be indented with a ferrite paste or ink, or by squeegeeing, wiping or doctoring the paste or powder over the surface of the base sheet following the indenting step. The paste, if one is used, is then allowed to cure. If dry powder is used, the indentations are subsequently overcoated as with a lacquer to secure the powder in place.

Since the magnetically sensible material is just level with or below the surface of the sheet, it is protected from physical abuse. This record is eminently suitable for use as a pocket credit card. The filled indentations may, of course, be further protected by an overlay, for example, of a plastic lacquer or by bonding a plastic film thereover. When the ferrite material is impacted into the indentation into a plastic card, the "spring-back" properties of the plastic cause the walls of the indentations to physically firmly hold the ferrite material in place.

The magnetic record is non-alterable and non-erasable, and is not subject to magnetic distortion or cancellation, especially if it is read with a reluctance type playback head. The record gives an excellent high signal to noise ratio because of the lack of magnetic material between recorded data bits.

The record can have on its face conventional man-readable information, so that the record can be stored, retrieved, and read either manually or by machine.

The record can be in the form of a tape with only one or two lines of recorded information thereon, or can be in the form of a sheet with a plurality of spaced lines thereon. The indentations made by the stylus can be at an angle of from 45.degree. to 90.degree. to the line of the series of bits. The width of the indentations should be greater than the width of the reading head to eliminate end distortion by the filled indentations. Usually the indentations will have a length greater than 0.0005 inches, a width as desired, usually 0.05 to 0.50 inches and be spaced 50 to 500 bits per inch. The indentations may have certain selected shapes in cross-section, such as square, triangular, round, etc., to achieve special effects.

This invention has particular utility for the manufacture of machine-readable credit cards, retail merchandise tags, airline documents, identification badges, stock certificates, bank checks, and the like, such as would be used in data processing and information transmission systems.

Referring to FIGS. 1 and 2, a plastic sheet, card stack, or the like 3, is passed beneath a recording head 4 comprising a solenoid driven stylus 5. The head is connected to a suitable impulse generator 6. The stylus strikes the surface of the record member 3, leaving a line of indentations 7 spaced in an alpha-numeric code form. The presence of an indentation, for example, may represent the binary "1" signal and the absence, the binary "0" signal. The record member can usually be passed under the recording head at a rate of 1 to 50 inches per second.

After being indented, the record member next has a magnetic ink paste 9 squeezed into the indentations, as by a blade 8. The surface of the card may then be wiped, if necessary, and the ink is allowed to cure. Suitable magnetic inks are:

1. Sinclair and Valentine's (Division of Martin Marietta) L. P. Mag. Black B

920456;

2. lewis Robert's Inc. Magnetic Black F70460;

3. kohl & Madden's Magnetic Black Q-9471.

As an example, with reference to FIG. 2, the recording density can be 100 bits per inch, the indentations can be triangular in cross-section as shown, having a depth d of 5 mils, a width w of 100 mils and a length l of 2 mils. Member 3 can be a plastic card 20 mils thick.

FIG. 3 illustrates a plastic pocket credit card 30. On its face it may contain conventional man-readable information such as the issuers identity at 31 and its logo at 32. Information that identifies the holder of the card such as his name 33 and his account number 34 are also on the face of the card in visual form. According to this invention, in order to make the card machine readable in a conventional manner as with a permeability, velocity, or flux reading apparatus, the card is imaged with a series of fine indentations 35, 36 and 37 in an alpha-numeric binary code, which indentations are filled to approximately the surface of the card with finely divided particles of a magnetically sensible material held in situ by a suitable binder or cement or plastic overcoating. This encoded information can, for example, be used to identify the issuer at 37, and the card holder at 35 and 36. The card can be read by inserting it into a reading device and passing it under suitable reading heads, or by passing the reading heads thereover, the heads being aligned with strips 35, 36 and 37.

If the reader were in a department store and connected to a central computer containing the requisite information, it could be used to verify the account and to print through a printer the customer receipts, inventory control slips and the like, using a suitable encoding keyboard operated by the clerk for the direct entry of information concerning the particular purchase.

This invention is particularly suited to the adapting of the present type of embossed pocket credit cards to be machine readable. The holder of such a card can simply stop at a "conversion station" wherein the code of this invention can almost immediately be placed on a suitable predetermined portion of the surface of the card. It would not be necessary, therefore, for the holder of the card to surrender it for any length of time. This invention can also be used to regenerate business documents having a machine-readable code of one type, such as a punched card, to a document containing the alphanumeric magnetically sensible binary code of the present invention. All that is required is a normal reader adapted to handle the original coded document and a printer as described in conjunction with FIG. 1.

FIG. 4 illustrates another embodiment of the invention. A plastic card comprised of a plastic base layer 43 with a clear plastic top coating 42 is overcoated with a layer of a magnetic ink or paste (not shown) in the area to be indented, and the ink is partially pre-dried, if desired, to some extent. A blunt end stylus 41 is then used

to indent the card in the manner previously described and force the ink 44 into the indentation. The depth *d* of the indentation can be about equal to, or slightly greater than, its length *l*, e.g., 54 mils. With the removal of the stylus, the spring-back properties of the plastic cause the walls to bulge inwardly as shown and firmly grip or bind the ink 44 in place, such that it cannot be dislodged, even with bending of the card. Thereafter, the excess ink is removed from the background areas as by wiping with a solvent-dampened rag or wiper.

See Abstract and Detailed Description Wallace, col. 1, line 35 through col. 2, line 25 and col. 2, line 39 through col. 4, line 5

As can be seen from the foregoing, the examiner-identified portions of Wallace do not recite the text of clauses (a) – (c) as recited in Independent Claim 37. For instance, clause (a) recites "forming an outer surface computer-readable representation part including a representation of the outer surface of the item." Emphasis added. A recitation of this clause cannot be found anywhere in the text of Wallace. Clause (b) recites "forming an identifying surface computer-readable representation part of at least one closed three-dimensional identifying surface, the at least one identifying surface corresponding to identifying information that identifies the item, and the at least one identifying surface being contained within the outer surface." Emphasis added. A recitation of this clause cannot be found anywhere in the text of Wallace. Clause (c) recites "associating the outer surface computer-readable representation part and the identifying surface computer-readable representation part." Similarly, a recitation of this clause cannot be found anywhere in the text of Wallace.

Applicant has reviewed the Examiner cited portions of Wallace and is unable to locate a recitation of clauses (a) – (c) of Claim 37. Applicant further respectfully points out that the Examiner has provided no evidence or reason as to why the text of Wallace should be interpreted to teach clauses (a) – (c) of Independent Claim 37 as the Examiner alleges.

Given that Applicant has shown, above, what Wallace actually recites, the question thus naturally arises as to how Examiner saw Wallace as teaching clauses (a) – (c) of Independent Claim 37.

Applicant respectfully points out that the Applicant's Application is the only one objective examiner-cited document of record that shows or suggests what Examiner purports the reference to teach. From this and Wallace's express recitations (see above), it follows that Examiner is interpreting Wallace through the lens of Applicant's application, which is

impermissible hindsight use. Thus, at present, Examiner's assertions regarding Wallace are untenable.

Accordingly, under the MPEP standards as set forth above, the Examiner has not established a *prima facie* case that art of record anticipates Independent Claim 37. Applicant respectfully asks Examiner to hold Independent Claim 37 allowable and to issue a Notice of Allowance of same.

2. Dependent Claims 38-42 Patentable for at Least Reasons of Dependency from Independent Claim 37

Claims 38-42 depend either directly or indirectly from Independent Claim 37. "A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers." *See* 35 U.S.C. § 112 paragraph 4. Consequently, Dependent Claims 38-42 are patentable for at least the reasons why Independent Claim 37 is patentable. Accordingly, Applicant respectfully requests that Examiner hold Dependent Claims 38-42 patentable for at least the foregoing reasons, and issue a Notice of Allowability on same.

G. Technical Material Cited by Examiner Does Not Show or Suggest the Text of Independent Claim 43 and Dependent Claims 44-48 as Presented Herein; Notice of Allowance of Same Respectfully Requested

1. Independent Claim 43

Independent Claim 43 recites as follows:

"A method of manufacturing an item, the method comprising:

forming a computer-readable representation of the item, the computer-readable representation including a representation of at least one three-dimensional configuration, the at least one three-dimensional configuration corresponding to identifying information that identifies the item; and

producing the item using the computer-readable representation of the item, the item including

- (1) at least one structural material, and

(2) the at least one three-dimensional configuration, the at least one three-dimensional configuration including at least one of

(a) a void within the at least one structural material, or

(b) at least one identifying material substantially shaped as at least part of the at least one three-dimensional configuration and enclosed within the at least one structural material, wherein the at least one structural material enclosing the at least one identifying material is substantially opaque to visible light."

As shown following, the technical material cited by Examiner does not recite the text of Independent Claim 43, and thus Applicant respectfully requests that Examiner allow Independent Claim 43 for at least those reasons.

a) Technical Material Cited by Examiner Does Not Show or Suggest the Text of Independent Claim 43

As set forth above, Independent Claim 43 recites as follows: "A method of manufacturing an item, the method comprising: (i) forming a computer-readable representation of the item, the computer-readable representation including a representation of at least one three-dimensional configuration, the at least one three-dimensional configuration corresponding to identifying information that identifies the item; and (ii) producing the item using the computer-readable representation of the item, the item including (1) at least one structural material, and (2) the at least one three-dimensional configuration, the at least one three-dimensional configuration including at least one of (a) a void within the at least one structural material, or (b) at least one identifying material substantially shaped as at least part of the at least one three-dimensional configuration and enclosed within the at least one structural material, wherein the at least one structural material enclosing the at least one identifying material is substantially opaque to visible light."¹⁴

With respect to Independent Claim 43, Examiner has stated "Wallace teaches an item (plastic card) comprising an outer part including at least one outer material that is substantially opaque to visible light (record member 3); and an identifier including at least one three-dimensional configuration (indentations 7 and magnetic ink paste 9) corresponding to the

¹⁴ The lettering of the clauses herein is merely for sake of clarity of argument and should not be taken to imply any particular ordering of the clauses.

identifier, the at least one three-dimensional configuration being embedded within the at least one outer material and including at least one of a substantially empty cavity in the at least one outer material (figure 2), or at least one identifying material filling at least part of a cavity in the at least one outer material and wherein the at least one outer material in which the at least one identifying material fills at least part of the cavity is substantially opaque to visible light; a method of making an item, the method comprising: forming at least one portion of the item from at least one structural material; and integrally with said forming the at least one portion, enclosing within the at least one structural material identifying information that identifies the item, the identifying information including at least one three-dimensional configuration including at least one of a void substantially shaped as the at least one three-dimensional configuration, the void defined by the at least one structural material, or an identifying material shaped as at least part of the at least one three-dimensional configuration, wherein the at least one structural material is substantially opaque to visible light; the item and method wherein the identifier identifies the item uniquely; the item and method wherein the at least one three-dimensional configuration is directly accessible by physically separating the at least one portion into at least two parts; the item wherein the at least one three-dimensional configuration is directly accessible only by disassembling the item; the item wherein the at least one identifying material emits identifying electromagnetic radiation when irradiated with specified electromagnetic radiation; the item wherein the identifying material comprises a security tag; the method wherein the void is substantially empty; the method wherein the identifying information identifies the item uniquely by including a serial number that is unique to the item; and the method wherein the structural material is substantially opaque to visible light." *See Examiner's Office Action*, p. 2-4 (6 February 2008). Applicant respectfully disagrees and traverses the rejection.

Applicant respectfully points out that Applicant has reviewed the portions of Wallace identified by Examiner, and so far as Applicant can discern, Wallace does not recite the text of Applicant's Independent Claim 43. Rather, the relevant portions of Wallace recite as follows:

A magnetically sensible record of data is prepared by indenting or embossing the surface of a non-magnetic receptor sheet, such as a plastic or cardboard card, with a linear series of indentations arranged in a binary code form. In one embodiment, the indentations are filled, as by squeegeeing with finely divided particles of a

magnetically sensible material such as magnetic iron oxide and a binder therefor, and fixing the particles in the indentations as by drying or setting the binder when one is used or by overcoating with a plastic film. In another embodiment the card is first coated with the ferrite material so that the indentations are filled at the moment of impact, after which excess ferrite material is removed from the background areas as by wiping. The data record per se is also claimed. It is characterized by the absence of magnetic material between the individual bits of data, such that the card, when read, gives a high signal to noise ratio.

According to the present invention, a suitable base sheet such as card stock or a plastic is indented with a series of indentations with a suitable stylus such as one operated by a solenoid and designed to imprint the sheet as the sheet moves thereunder. The indentations are in a binary code form and their density can be 50 to 500 bits per inch or higher. The indentations are filled with a fluid ink or paste, or a dry powder containing particles of a magnetically sensible material such as a magnetic iron oxide, mumetal or carbonyl iron. This can be done by precoating the card in the area to be indented with a ferrite paste or ink, or by squeegeeing, wiping or doctoring the paste or powder over the surface of the base sheet following the indenting step. The paste, if one is used, is then allowed to cure. If dry powder is used, the indentations are subsequently overcoated as with a lacquer to secure the powder in place.

Since the magnetically sensible material is just level with or below the surface of the sheet, it is protected from physical abuse. This record is eminently suitable for use as a pocket credit card. The filled indentations may, of course, be further protected by an overlay, for example, of a plastic lacquer or by bonding a plastic film thereover. When the ferrite material is impacted into the indentation into a plastic card, the "spring-back" properties of the plastic cause the walls of the indentations to physically firmly hold the ferrite material in place.

The magnetic record is non-alterable and non-erasable, and is not subject to magnetic distortion or cancellation, especially if it is read with a reluctance type playback head. The record gives an excellent high signal to noise ratio because of the lack of magnetic material between recorded data bits.

The record can have on its face conventional man-readable information, so that the record can be stored, retrieved, and read either manually or by machine.

The record can be in the form of a tape with only one or two lines of recorded information thereon, or can be in the form of a sheet with a plurality of spaced lines thereon. The indentations made by the stylus can be at an angle of from 45.degree. to 90.degree. to the line of the series of bits. The width of the indentations should be greater than the width of the reading head to eliminate end distortion by the filled indentations. Usually the indentations will have a length greater than 0.0005 inches, a width as desired, usually 0.05 to 0.50 inches and be

spaced 50 to 500 bits per inch. The indentations may have certain selected shapes in cross-section, such as square, triangular, round, etc., to achieve special effects.

This invention has particular utility for the manufacture of machine-readable credit cards, retail merchandise tags, airline documents, identification badges, stock certificates, bank checks, and the like, such as would be used in data processing and information transmission systems.

Referring to FIGS. 1 and 2, a plastic sheet, card stack, or the like 3, is passed beneath a recording head 4 comprising a solenoid driven stylus 5. The head is connected to a suitable impulse generator 6. The stylus strikes the surface of the record member 3, leaving a line of indentations 7 spaced in an alpha-numeric code form. The presence of an indentation, for example, may represent the binary "1" signal and the absence, the binary "0" signal. The record member can usually be passed under the recording head at a rate of 1 to 50 inches per second.

After being indented, the record member next has a magnetic ink paste 9 squeezed into the indentations, as by a blade 8. The surface of the card may then be wiped, if necessary, and the ink is allowed to cure. Suitable magnetic inks are:

1. Sinclair and Valentine's (Division of Martin Marietta) L. P. Mag. Black B 920456;
2. Lewis Robert's Inc. Magnetic Black F70460;
3. Kohl & Madden's Magnetic Black Q-9471.

As an example, with reference to FIG. 2, the recording density can be 100 bits per inch, the indentations can be triangular in cross-section as shown, having a depth d of 5 mils, a width w of 100 mils and a length l of 2 mils. Member 3 can be a plastic card 20 mils thick.

FIG. 3 illustrates a plastic pocket credit card 30. On its face it may contain conventional man-readable information such as the issuer's identity at 31 and its logo at 32. Information that identifies the holder of the card such as his name 33 and his account number 34 are also on the face of the card in visual form. According to this invention, in order to make the card machine readable in a conventional manner as with a permeability, velocity, or flux reading apparatus, the card is imaged with a series of fine indentations 35, 36 and 37 in an alpha-numeric binary code, which indentations are filled to approximately the surface of the card with finely divided particles of a magnetically sensible material held in situ by a suitable binder or cement or plastic overcoating. This encoded information can, for example, be used to identify the issuer at 37, and the card holder at 35 and 36. The card can be read by inserting it into a reading device and passing it under suitable reading heads, or by passing the reading heads thereover, the heads being aligned with strips 35, 36 and 37.

If the reader were in a department store and connected to a central computer

containing the requisite information, it could be used to verify the account and to print through a printer the customer receipts, inventory control slips and the like, using a suitable encoding keyboard operated by the clerk for the direct entry of information concerning the particular purchase.

This invention is particularly suited to the adapting of the present type of embossed pocket credit cards to be machine readable. The holder of such a card can simply stop at a "conversion station" wherein the code of this invention can almost immediately be placed on a suitable predetermined portion of the surface of the card. It would not be necessary, therefore, for the holder of the card to surrender it for any length of time. This invention can also be used to regenerate business documents having a machine-readable code of one type, such as a punched card, to a document containing the alphanumeric magnetically sensible binary code of the present invention. All that is required is a normal reader adapted to handle the original coded document and a printer as described in conjunction with FIG. 1.

FIG. 4 illustrates another embodiment of the invention. A plastic card comprised of a plastic base layer 43 with a clear plastic top coating 42 is overcoated with a layer of a magnetic ink or paste (not shown) in the area to be indented, and the ink is partially pre-dried, if desired, to some extent. A blunt end stylus 41 is then used to indent the card in the manner previously described and force the ink 44 into the indentation. The depth d of the indentation can be about equal to, or slightly greater than, its length l , e.g., 54 mils. With the removal of the stylus, the spring-back properties of the plastic cause the walls to bulge inwardly as shown and firmly grip or bind the ink 44 in place, such that it cannot be dislodged, even with bending of the card. Thereafter, the excess ink is removed from the background areas as by wiping with a solvent-dampened rag or wiper.

See Abstract and Detailed Description Wallace, col. 1, line 35 through col. 2, line 25 and col. 2, line 39 through col. 4, line 5

As can be seen from the foregoing, the examiner-identified portions of Wallace do not recite the text of clauses (i) – (ii) as recited in Independent Claim 43. For instance, clause (i) recites "forming a computer-readable representation of the item, the computer-readable representation including a representation of at least one three-dimensional configuration, the at least one three-dimensional configuration corresponding to identifying information that identifies the item." Emphasis added. A recitation of this clause cannot be found anywhere in the text of Wallace. Clause (ii) recites "producing the item using the computer-readable representation of the item, the item including (1) at least one structural material, and (2) the at least one three-dimensional configuration, the at least one three-dimensional configuration including at least one

of (a) a void within the at least one structural material, or (b) at least one identifying material substantially shaped as at least part of the at least one three-dimensional configuration and enclosed within the at least one structural material, wherein the at least one structural material enclosing the at least one identifying material is substantially opaque to visible light." Emphasis added. Similarly, a recitation of this clause cannot be found anywhere in the text of Wallace.

Applicant has reviewed the Examiner cited portions of Wallace and is unable to locate a recitation of clauses (i) – (ii) of Claim 43. Applicant further respectfully points out that the Examiner has provided no evidence or reason as to why the text of Wallace should be interpreted to teach clauses (i) – (ii) of Independent Claim 43 as the Examiner alleges.

Given that Applicant has shown, above, what Wallace actually recites, the question thus naturally arises as to how Examiner saw Wallace as teaching clauses (i) – (ii) of Independent Claim 43.

Applicant respectfully points out that the Applicant's Application is the only one objective examiner-cited document of record that shows or suggests what Examiner purports the reference to teach. From this and Wallace's express recitations (see above), it follows that Examiner is interpreting Wallace through the lens of Applicant's application, which is impermissible hindsight use. Thus, at present, Examiner's assertions regarding Wallace are untenable.

Accordingly, under the MPEP standards as set forth above, the Examiner has not established a *prima facie* case that art of record anticipates Independent Claim 43. Applicant respectfully asks Examiner to hold Independent Claim 43 allowable and to issue a Notice of Allowance of same.

2. Dependent Claims 44-48 Patentable for at Least Reasons of Dependency from Independent Claim 43

Claims 44-48 depend either directly or indirectly from Independent Claim 43. "A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers." *See* 35 U.S.C. § 112 paragraph 4. Consequently, Dependent Claims 44-48 are patentable for at least the reasons why Independent Claim 43 is patentable. Accordingly, Applicant respectfully requests that Examiner hold Dependent Claims 44-48 patentable for at least the foregoing reasons, and issue a Notice of Allowability on same.

IV. CONCLUSION

Applicant may have herein cancelled and/or amended one or more claims. Applicant notes that any such cancellations and/or amendments will have transpired (i) prior to issuance and (ii) in the context of the rules that govern claim interpretation during prosecution before the United States Patent and Trademark Office (USPTO). Applicant notes that the rules that govern claim interpretation during prosecution form a radically different context than the rules that govern claim interpretation subsequent to a patent issuing. Accordingly, Applicant respectfully submits that any cancellations and/or amendments herein should be held to be tangential to and/or unrelated to patentability in the event that such cancellations and/or amendments are viewed in a post-issuance context under post-issuance claim interpretation rules.

Insofar as that the Applicant may have herein cancelled/amended claims sufficient to obtain a Notice of Allowability of all claims pending, Applicant may not have herein explicitly addressed all rejections and/or statements in Examiner's Office Action. The fact that rejections and/or statements may not be herein explicitly addressed should NOT be taken as an admission of any sort, and Applicant hereby reserves any and all rights to contest such rejections and/or statements at a later time. Specifically, no waiver (legal, factual, or otherwise), implicit or explicit, is hereby intended (e.g., with respect to any facts of which Examiner took Official Notice, and/or for which Examiner has supplied no objective showing, Applicant hereby contests those facts and requests express documentary proof of such facts at such time at which such facts may become relevant). For example, although not expressly set forth herein, Applicant continues to assert all points of (e.g. caused by, resulting from, responsive to, etc.) any previous Office Action, and no waiver (legal, factual, or otherwise), implicit or explicit, is hereby intended. Specifically, insofar as that Applicant does not consider the cancelled/unamended claims to be unpatentable, Applicant hereby gives notice that it intends to file and/or has filed a continuing application in order prosecute such unamended claims.

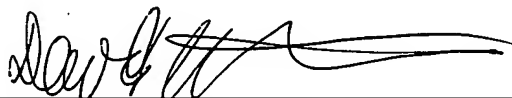
With respect to any cancelled claims, such cancelled claims were and continue to be a part of the original and/or present patent application(s). Applicant hereby reserves all rights to present any cancelled claim or claims for examination at a later time in this or another

application. Applicant hereby gives public notice that any cancelled claims are still to be considered as present in all related patent application(s) (e.g. the original and/or present patent application) for all appropriate purposes (e.g., written description and/or enablement). Applicant does NOT intend to dedicate the subject matter of any cancelled claims to the public.

The Examiner is encouraged to contact the undersigned by telephone at (402) 496-0300 to discuss the above and any other distinctions between the claims and the applied references, if desired. Also, if the Examiner notes any informalities in the claims, he is encouraged to contact the undersigned to expediently correct such informalities.

Respectfully submitted,

May 6, 2008

A handwritten signature in black ink, appearing to read 'David S. Atkinson', written over a horizontal line.

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